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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/775,889

02/09/2004

Thadecus Schauer

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08/31/2006

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EXAMINER

TUROCY, DAVID P

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/775,889

Applicant(s)

SCHAUER ET AL.

Examiner

David Turocy

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendments, filed 6/20/2006, have been fully considered and reviewed by the examiner. The examiner notes the amendment to claim 1 and therefore the claim object has been withdrawn. Additionally, the examiner notes the cancellation of claim 13. Claims 1-12 and 14-16 remain pending the instant application

### ***Response to Arguments***

2. Applicant's arguments filed 6/20/2006 have been fully considered but they are not persuasive.

The applicant argued against the Bugon reference, stating the reference discloses adsorption, whereas such a process is undesirable in the present claims. However, such an argument is not commensurate in scope with the claims. The claims require a solvolysis reaction and the conversion to a form showing low solubility, whereas Bugon discloses a hydrolysis reaction, which is a form of a solvolysis reaction, and depositing the material onto the substrate, wherein the deposited material is no longer in solution and therefore reads on the claim limitations of showing reduced solubility thereby depositing on the substrate.

The applicant has argued against the Bugon reference stating the reference fails discloses reducing solubility, however, the examiner disagrees and maintains the above argument. Additionally, after the hydrolysis reaction the polymer clearly shows reduced

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solubility because it adsorbs onto the substrate surface and therefore is no longer in solution. The applicant has argued the hydrolysis reaction results in increased solubility, however, arguments must be considered mere attorney speculation not supported by evidence. *In re Scarborough*, 500 F.2d 560,566 182 USPQ 298,302 (CCPA 1974).

The applicant has argued against the Bugon reference stating the reference fails to disclose a controlled coating, whereas the adsorption layers only function as long as there are available adsorptive sites. Such an argument is not commensurate in scope with the claims because the claims require coating the surface and are not limited to multiple coating layers or controlling the thickness, etc. as argued by the applicant.

The applicant has argued the present invention suggests using polyvinyl alcohol as the starting material that will undergo solvolysis and such is converted to polyvinyl alcohol derivative by way of the solvolysis reaction, which is then deposited on the substrate surface. Such an argument is not commensurate in scope with the claims because the claims do not claim a PVA starting material and a PVA derivative as the deposited material, but rather encompass a much broader range of materials.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-5, 7-8, 10, 12, 14, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 528 602 by Bugnon et al., hereafter Bugnon.

Claim 1 and 12: Bugnon teaches coating a particulate pigment with a polymer (abstract). Bugnon discloses coating the pigment with a polyvinyl alcohol by forming the polyvinyl alcohol by a solvolysis reaction of a vinyl acetate polymer and pigment dispersion (Page 2, lines 35-38). Bugnon discloses dispersing a pigment in a solution of a polymer to provide coating onto the pigment (Page 2, line 56-Page 3, line 8). While Bugnon fails to disclose the solvolysis reaction results in a polymer showing reduced solubility, since the polymer formed from the reaction coats the pigment, the polymer inherently results in a form showing reduced solubility.

Claim 3: Bugnon discloses a polyvinyl acetate, which includes a unsaturated group on a backbone chain.

Claims 4 and 5: Bugnon discloses producing active groups and also discloses the step of crosslinking the polymer after coating the pigment (Page 4-Page 5).

Claim 7: Bugnon discloses washing the coated pigment (Page 4, line 23).

Claims 8, 10, and 16: Bugnon discloses a pigment substrate and a polymer with a molar mass in the range as claimed (abstract, Page 2, lines 35-38).

Claim 14: Bugnon discloses using a metallic pigment (Page 4, line 37).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bugnon as applied to claim 1 above and further in view of Marie publication, hereafter Marie.

Bugnon teaches all the limitations of these claims as discussed in the 35 USC 102(b) rejection above, however, the reference fails to disclose partial solvolysis.

However, Marie, teaches poly vinyl alcohol is formed by solvolysis of poly vinyl acetate and discloses controlling the hydrolysis depending on the desired product

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(Introduction). Marie discloses using partial solvolysis of a poly vinyl acetate to provide poly(vinyl alcohol) (introduction).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bugnon to use partial solvolysis as suggested by Marie to provide a desirable polyvinyl alcohol because Marie discloses it is advantageous to control solvolysis, including performing only partial solvolysis, when forming poly vinyl alcohol from poly vinyl acetate

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bugnon in view of "Addition Polymerization". Encyclopedia of Polymer Science and Engineering. Volume 1. New York. Pg 470-471.

Bugnon teaches all the limitations of these claims as discussed above in the 35 USC 102(b) rejection except, however, Bugnon fails to teach of a crosslinking reaction is a free-radical, addition, or condensation reaction.

However, "Addition Polymerization" teaches that vinyls are known in the art to crosslink using addition polymerization (Paragraph 3).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Bugnon to use the addition crosslinking reaction as suggested by "Addition Polymerization" to provide a desirable crosslinking because Bugnon teaches of using a crosslinking reaction to bond a vinyl polymer to the substrate surface and

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"Addition Polymerization" teaches that vinyl polymers are known in the art to crosslink using a addition reaction.

9. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bugnon in view of US Patent 3393162 by Cox et al., hereafter Cox.

Bugnon discloses coating a polymer coating pigment and discloses various types of pigments, including metallic complexes and dyestuff pigments (Page 4, line 37), but fails to disclose coating a flat substrate or an aluminum substrate.

However, Cox, teaching of a method of providing polymer coatings on pigments, discloses aluminum flakes, which are inherently flat in structure, benefit from a polymer coating and also discloses aluminum flakes are known substitutes of dye pigments (Example 8, column 1, lines 30-38). Substitution of equivalents requires no express motivation. *In re Fount*, 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152, USPQ (CCPA 1967).

10. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bugnon in view of US Patent 3884871 by Herman et al ("Herman").

Bugnon teaches all the limitations of these claims as discussed above in the 35 USC 102(b) rejection, however, Bugnon fails to explicitly teach of a forming a nano layer on the surface of the substrate.



Herman, teaching of a process of coating pigment particles with a polymer, discloses that the particles measured were 0.25 – 0.26 micron in diameter both before and after coating (Example 1, Column 6, lines 32-36). It is the examiners position that a coating thickness that does not change the diameter in the micron scale inherently provides a coating thickness in the nano scale.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Bugnon to use the nanolayer suggested by Herman to provide a desirable pigment coating because Bugnon teaches using a polymer solution to coat a pigment particulate and Herman teaches that it is desirable to coat a pigment particle with a nanolayer from a polymer solution.

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy  
AU 1762



**BRET CHEN**  
**PRIMARY EXAMINER**